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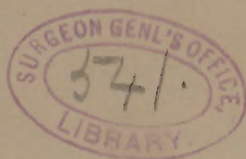
TREATMENT OF LEUKOMAIN-POISONING.

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In previous papers¹ I have shown that paraxanthin and other leukomains of the uric-acid group are etiologically related to true migraine and kindred diseases, such as migrainous epilepsy and migrainous gastric neurosis. For the etiology and symptomatology of these diseases the reader is referred to these papers, as it is my purpose in this communication to speak only of the treatment of these conditions.

The outline of treatment that I shall present is one in which I have learned to have much confidence and one that I am anxious to submit to the judgment of medical men everywhere, in order that I may the more quickly determine its value and its limitations.

The medicinal treatment is the important and indispensable part of the treatment and consists of two prescriptions, which are used simultaneously:

Take—Potassium permanganate . . . 20 grains.

Make 20 pills and coat with salol.²

One of these is to be taken three times a day one hour after meals.

¹ THE MEDICAL NEWS, Phila., May 26 and October 3, 1894, and Transactions of the Association of American Physicians, vol. x, 1895.

² Mr. Bange, a pharmacist, uses the following formula for coat-



Take—Sodium salicylate . . . 2 drams.
 Dry sodium phosphate . . . 4 “
 Dry sodium sulphate . . . 10 “ —Mix.

A teaspoonful, more or less, is to be taken in a glass of seltzer-water each morning.

The foregoing prescriptions can be given continuously for months at a time. In one case in which the treatment was eminently satisfactory I continued this treatment without a single day of interruption for four months. I am not sure that it is necessary to have the pills of potassium permanganate coated with salol, as I believe I have gotten the same good results with the uncoated pills. I have used the salol-coated pills on the theory that this coating would enable the potassium permanganate to pass through the stomach and be dissolved in the small intestine, and in this way act as an intestinal antiseptic. But the special purpose for which it is given is to neutralize poisonous leukomains circulating in the blood. (See previous papers.)

In the second prescription it is important to have pure salts of sodium. These salts will not be so unpalatable if taken in cold seltzer-water. The seltzer-water can be obtained in siphon and used as directed. It is not an important part of the treatment, and is used for the most part to make the “salts” more palatable. Water may therefore be substituted for the seltzer-water without, in any way, detracting from the efficacy of the treatment. In this prescription the quantities of the three sodium-

ing the pills with salol; Salol, 4 parts; shellac, 1 part; alcohol, 40 parts.

salts may be changed to suit individual cases, the formula as given being the one that I almost invariably use, and I have rather preferred to vary the dose to suit individual cases than to rewrite the prescription with the quantities of the ingredients changed.

When there is considerable constipation it is necessary to give a heaping teaspoonful of the salts to produce the cathartic action which is necessary in the treatment of these cases. If a small dose of salts produces excessive catharsis, the dose may be diminished or the prescription rewritten with less of sodium sulphate and more of the phosphate. But I have often noted that the gouty diarrhea, which many of these patients have, is cured rather than exaggerated by these salts. The "salts" should be given every morning for a considerable period of time.

The relief that follows the treatment outlined is immediate. It is a common experience for patients not to have a single so-called "nerve-storm" after being put upon it. It will often accomplish remarkable results without the aid of any dietetic or hygienic treatment.

The dietetic treatment is very important and should always be adopted as an aid to the medicinal treatment. The diet to be observed is as follows: Fresh meat once a day, with fish, eggs, milk, fruit, and vegetables. I ordinarily direct the patient as to what he should not have, telling him to avoid beer, wine, meat-soup, and meat, except one piece of fresh meat at dinner. Apart from this he may have anything he wishes within the limits of his digestive

capacity. Not infrequently the medicinal treatment already outlined very much widens the range of the digestive capacity of the patient, so that he can eat freely of many fruits and vegetables which previously he had learned to fear.

The hygienic treatment is also important in many cases and consists simply of a warm alkaline bath each morning and plenty of exercise in the open air. I usually direct the patient to take a warm alkaline bath as soon as he arises in the morning, and the bath should, when convenient, be followed by an alcohol rub. A handful of sodium bicarbonate and one of sodium chlorid thrown into an ordinary bath-tub of hot water will make the water sufficiently alkaline. The alkaline bath has not appeared to me to be necessary in the treatment of migrainous conditions, and it is not my routine to prescribe it under these conditions; but I have found it a very useful, if not a necessary, adjunct to the other treatment in certain so-called gouty conditions of the muscles and joints. A discussion of the manner in which the alkaline bath produces good results is not within the scope of this paper.

Exercise in the open air is always a valuable aid in the treatment, but it is by no means always practicable, and it is, therefore, well to know that excellent results may, as a rule, be obtained without it. Many cases are, in the beginning of the treatment, physically unable to take open-air exercise, and many of them are confined to hospitals and other institutions where this phase of the treatment cannot be very satisfactorily carried out.

In the foregoing outline I have not attempted to

write a complete chapter on the treatment of leukomain-poisoning, but only to call attention to a line of treatment that I believe to have some specific influence in the treatment of this condition. This treatment can be combined or alternated with any other, as the individual case may demand. The conditions that I believe can be benefited or cured by this treatment are as follows :

1. *True migraine*,¹ which I believe to be a form of leukomain-poisoning, can almost certainly be relieved by this treatment. In these cases the treatment should be kept up uninterruptedly for from four to six weeks, and then every other week for from four to six weeks longer, and after this for one week in every month for a few months, when diet and exercise may be depended upon to complete the cure. I have now under treatment ten cases of migraine, all of which have been completely relieved of their paroxysmal attacks, as the following illustrative cases will show :

CASE I.—Mrs. G., aged thirty-five years, the mother of two children and the wife of a laboring-man, is a hard-working German woman, who has suffered from sick-headache ever since she can remember. During the past few years she has had an attack almost every week. These attacks would send her to bed, and keep her there from twelve to thirty-six hours. On her sick-headache days her husband would have to cook and do the housework.

On May 10th this woman was placed under treatment, and this has been continued, as already described, to the present time (July 25th). This

¹ Loc. cit.

case had only the medicinal treatment, no dietetic or hygienic treatment being attempted. Since this treatment was begun she has not lost a day from work, has not had a paroxysm of sick-headache, and has never been so well since she can remember.

CASE II.—Mrs. E., a German woman, thirty-three years of age, is a meat-eater and beer-drinker. Her mother and one of her sisters have migraine, and she is and has been for many years a great sufferer from the same disorder, having an attack about every two weeks.¹ She was placed under treatment on April 20th, and the treatment has been continued till the present time (July 25th) without a single paroxysm of sick-headache, and during this period she has been for the first time in many years perfectly well.

CASE III.—Mrs. M., aged thirty-five years, has had an attack of migraine about every two weeks for many years. During the past few years these attacks have been so severe that life had become scarcely worth the living. The attacks always come on at the menstrual period, and as a rule once in the intermenstrual period.² She has been under treatment from April 4th to July 25th, and during this time she has been free from headache and quite well.

2. *Migrainous epilepsy*, which I have demonstrated to be a form of leukomain-poisoning, can always be benefited and often cured by the treatment already detailed. This disorder, which I have fully described in my previous papers,³ is a

¹ For a full history of this case, see THE MEDICAL NEWS, November 3, 1894, under the heading "Specimen No. 7."

² For a full history of the etiology and symptomatology of these attacks, see Transactions of the Association of American Physicians, vol. x, 1895.

³ Loc. cit.

form of epilepsy that occurs as a sequel to migrainous headaches of former years, or the epileptoid attacks may at times take the place of or alternate with the migrainous headaches. It is my belief that many of the cases of so-called hystero-epilepsy belong to this class, and can therefore be either benefited or cured by the treatment. In migrainous epilepsy the treatment should be continued somewhat longer than in true migraine, and the potassium-permanganate prescription is, I believe, of prime importance in the treatment of these cases. My experience with this type of cases, however, has not been sufficient for me to judge of the value or limitations of the treatment. I have a number of such patients under my care at the present time with every promise of success from the treatment, but they have been under observation for too short a time to justify any conclusions as to permanent benefit to be derived from the treatment. The following case will illustrate :

CASE IV.—Miss F., thirty years of age, has a neurotic family history. She is a fairly well-nourished girl, with no evidence of mental impairment. She has had sick-headache since she was a child, and during the past six or seven years she has occasionally had epileptoid attacks instead of the migrainous headaches. These epileptoid attacks have been growing more frequent of late, so that at the present time she never fails to have one at her menstrual period, and not uncommonly one in the intermenstrual interval. The migrainous headaches have also continued, and rarely does the woman pass a week without remaining in bed one day on account of an attack. Formerly the attacks of sick-

headache always came at the menstrual as well as during the intermenstrual periods, but now the menstrual epilepsy replaces the menstrual headache. The attacks of epilepsy are usually followed by some headache, but not by the nausea and vomiting that accompany the attacks of true migraine. The urine of this patient passed during and immediately after an attack of migrainous epilepsy and migrainous headache contained paraxanthin and xanthin in great excess.

The treatment was the same as has been outlined, and commenced on May 23d. The woman has passed two menstrual periods without a symptom of epilepsy, and with the exception of one slight attack of headache she has been quite well to the present time.

3. *Leukomain gastric neurosis* is a well-known form of migrainous disease that I have described in a previous paper, in which I gave the evidence upon which I based the conclusion that this was one of the manifestations of leukomain-poisoning.¹

CASE V.—Mrs. P., aged thirty-four years, is the mother of three children. She had “always been a sufferer from sick-headache” up to November, 1894. At that time frightful gastric attacks took the place of the migrainous headaches. These gastric attacks were very sudden in their onset, and were attended with great pain and with vomiting of mucus. They continued with increasing fury till relieved by hypodermic injections of morphin.

¹ For a full description of the etiology, symptomatology, and course of this phase of leukomain-poisoning, the reader is referred to my article in the Transactions of the Association of American Physicians, vol. x, 1895, where the case of “Mrs. P.” is given with careful detail.

They recurred about every two weeks till, during March and April, they were so frequent and so severe that the patient was in bed more than half the time.

On April 15th this patient was placed on the treatment that has been outlined in this paper, and it has been continued up to the present time (three-and-a-half months). During this period the patient has not had the slightest symptom of leukomain-poisoning.

The result in this case was truly remarkable, and never have I seen the treatment of any disease followed by more specific results. For this reason I wish especially to ask for a trial of this treatment in cases of leukomain gastric neurosis.

4. *Hypochondriasis and neurasthenia* in patients having a gouty inheritance are often entirely relieved by the treatment already given.

CASE VI.—Mr. R., a middle-aged man, who had always been a good liver, came to my office last May to get relief from more or less constant pain in the abdomen. He was mentally depressed and so despondent about his condition that he could not be convinced but that he had some incurable abdominal disease. He was moody, irritable, and peevish, and did not think that medicines would do him any good. Knowing that there was a strong gouty tendency in this man's family I prescribed the treatment outlined, and he so promptly recovered that in three weeks he was entirely well.

5. Constant headache, sciatica, and intercostal and other neuralgias when occurring in the gouty can very commonly be relieved by the treatment described.

CASE VII.—Mr. S., aged fifty years, has been a great sufferer from myalgia and neuralgia for years. About five years ago he had an attack of acute gout, and since then he has had several very severe and prolonged attacks of “muscular rheumatism.” When he sent for me he had been suffering from an attack of sciatica and intercostal neuralgia for about two months, which had persisted in spite of good medical attention. This man entirely recovered after one month of treatment. The dietetic and hygienic treatment was as carefully looked after in this case as the medicinal.

CASE VIII.¹—Mrs. Y., aged thirty-seven years, has for years suffered from severe headache accompanied by nausea and sometimes vomiting. During the past nine years these attacks have occurred every two or three weeks, and have very often been so severe that the phenacetin and codein that she is accustomed to take gave her little relief.

On June 15th she was suffering from a headache that had continued almost uninterruptedly for three weeks; she had no nausea and no vomiting in this attack. Codein and phenacetin, of which she had taken a great deal, gave her only temporary relief. At this time Dr. Jones mentioned the case to me, and I advised the medicinal treatment described in this paper. This was done, and two days later the headache had ceased and the patient's general condition was very much better. The treatment was continued for a short while, and up to the present time (July 29th) the woman has remained quite well.

In this communication I have not attempted to give a clinical picture of every phase of leukomai-

¹ I am indebted to Dr. Robert J. Jones, Interne at the Cincinnati Hospital, for the notes of this case.

poisoning in which the treatment here detailed may prove beneficial, but have only sought to indicate the class of morbid conditions in which benefit may be expected from it.

Of the value of this treatment in articular gout I am not prepared to speak, although I have unpublished evidence that the leukomain plays a part in this disease. It is also my belief, founded upon the evidence given in previous papers, that many so-called uremic manifestations, including eclampsia, are in great part due to paraxanthin-poisoning, and for this reason I think that potassium permanganate given hypodermically might be of value in the treatment of puerperal and other eclampsias of uremic origin. I shall be under obligations for clinical reports on this treatment.

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